Science Process Skills

Vocabulary and Key Concepts

The Scientific Process involves:

making observations,
forming questions about what was observed,
gathering background information,
creating an educated guess that can be tested,
designing and performing an experiment to test the hypothesis,
observing and recording the results of the experiment,
drawing a conclusion from the results, and
forming new questions based on those results.

"Fair" Test- an experiment in which all factors are the same for each trial except the factor being tested.

Experiment- A test or special observation designed to make a discovery, to confirm or disprove something, or demonstrate a known fact under controlled conditions.

Hypothesis- An educated guess that makes a prediction as to how one variable will affect another. A hypothesis can be tested and specifies exact results for an experiment.

Quantitative observation- uses measurement to describe an object or action.

Qualitative observation- uses information provided by the five senses to describe an object or action.

Constant(s)- factors in an experiment that stay the same for each trial.

Control- The experimental control is what you compare your experimental data with. Without the control, you can't tell if the variable you are testing is what is causing your results.

Variable- Any factor in an experiment that can change as part of the interaction within the experiment. In other words, variables are anything can effect or change the results of a study.

Manipulated Variable (Independent Variable)- any changes that occur in an experiment that are directly caused by the experimenter. (The idea being tested.)

Responding Variable (Dependent Variable) - changes that occur because of changes to the independent variables. (The results of the test.)